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The Influence of Lower Secondary School Quality on Students' Learning Achievements in Two Selected Districts of Uganda

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Abstract
Purpose: The number of secondary schools in Uganda (private or public, and rural or urban) exponentially grew in the last decade up to 3,070 by 2017. While this was matched with a rise in enrolment, there was no corresponding growth in the number of competent teaching staff, nor other quality inputs. The objective of the study was to determine the influence of school quality on the pass rates at O'Level in two selected districts of Iganga and Jinja in the Eastern region of Uganda. **Method:** A stratified random sample of 36 secondary schools from a sample frame of 126 for the two districts was selected. The head teacher and one randomly selected teacher of each of the three core subjects of Mathematics, English Language, and Biology from each school acted as primary and secondary respondents respectively. A mixed research design approach was applied using both qualitative and quantitative primary data, while secondary data in form of pass rates was used. Out of 144 administered questionnaires, 127 were returned (effective response rate of 88.2%). Both the primary and secondary data was analyzed using the SPSS package and tested for adequacy (KMO), validity (Validity Index), and reliability (Cronbach's Alpha Coefficient Reliability) with respect to the null hypothesis that school quality does not have significant influence on the pass rates of lower secondary school candidates in the two selected districts of Uganda. **Results:** Overall, school quality was statistically significant on the students learning achievements at the lower secondary level in the two districts with the coefficient of school quality of β=0.076, Sig. = 0.0257, and the p-value = 0.0257. Specifically, a unit change in the school inputs on average affected the pass rate by 4.9% in the 34 schools that responded; while, a unit change in the school processes changed the pass rate by 7.1% on average in the schools. Similarly, urban schools on average performed at a pass rate of 94% compared to 84% by the rural schools; public schools' performance rate was 89% versus private schools' achievement of 90%. **Contribution to theory, policy and practice:** Government policies should be directed towards improving school quality while bridging the gaps between the rural and urban schools, and between the public and private schools as well. At school, the demand, supply and process drivers should together be targeted in their plan. Further studies into education quality should focus on in-depth analysis into the contributing factors to school quality, in form of both inputs and processes.
Keywords: lower secondary schools, school quality, inputs, process, and output.
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1.0 INTRODUCTION

Uganda has a four level formal education system, starting with an initial non-compulsory pre-primary phase of early childhood development for 3-5 year olds; followed by 7 years of primary education for the 6-12, before a 4 year course of lower secondary education (O'level) for the 13-16; and 2 years of advanced secondary education. Tertiary and university education varies between 2-5 years (GWP, 1992). The education system is regulated within the national legal and policy framework in which the institutions derive their mandates to plan and implement their programs.

Secondary education level is a formative stage for students' development in character and careers. Hence, the need for quality secondary education that enables children reach their full potential while at the same time entering society as full and productive citizens (Slade, 2017). School quality and students' learning achievements through teachers' attention, classroom setting, and overall school environment remain related (Mayer et al, 2000).

Following the introduction of universal secondary education (USE)[1] in 2007, school numbers grew three-fold to 3,070 by end 2017 from USE inception with enrolment exponentially expanding to 1.45 million during the same period (Statistical Abstract, 2017). While transition rate from primary to secondary level significantly improved from 50.9% before USE to 69.6% after the introduction of USE, gross enrolment ratio (GER)[2] and net enrolment ratio (NER)[3] remained low averaging 23.8 and 20.6 respectively over the period 2007-2017. By 2017 lower secondary education registered an average repetition rate 2%, average dropout rate of 20% across S1-S4, transition rate to the next academic level of Higher School Certificate (HSC) of 38%, and 10% absorption rate into vocational

[1] USE involves government covering learning and teaching costs for the student who meets the rest of the costs such as uniform and meals, USE schools make up 65% of the total numbers of schools (public and private).
[2] GER is total enrolment regardless of the age divided by the official age (13-16 years for O'level) in the population
[3] NER is total enrolment of the official age (13-16) divided by the population of the same age group

and primary teaching courses. The rest of the students were unaccounted for in the education system (Statistical Abstract 2017). These indicators are attested to by the proficiency rates in the core subjects of English Language, Mathematics, and Biology where there was average performance of 55.2%, 46.3%, and 21.3% respectively for the period 2010 to 2016 (NAPE, 2017).

1.1 Hypothesis

H_0: Lower secondary school quality does not have significant effect on lower secondary school students' learning achievements in Uganda.

1.2 Objective of the Study

The objective of the study is to investigate the relation between the quality of lower secondary schools and the learning achievements in Uganda. The problem statement this study deals with is low enrolment rate (NER), low students' retention rate, and low proficiency rate in the lower secondary schools in Uganda; and how quality of lower secondary schools can address the problem. Surprisingly, no study has attempted to effectively seek teachers' views on how school quality factors affect students learning achievements in Uganda secondary schools, though similar studies have been carried out in other countries including: Card and Krueger, 1992; Weiss, 1998; Bedi and Edwardy, 2002; Teddie and Reynolds, 2010; and IIies, Pitic and Bratear, 2013. Therefore, the study sought to bridge this gap by examining how school quality factors influence academic performance of O'level students in urban/rural and public/private schools in the districts of Jinja and Iganga in Uganda.

2.0 LITERATURE REVIEW

2.1 School Quality

The key indicators of school quality are often the level of student achievement as an output coupled with school characteristics that influence learning achievements, including efforts that promote efficient management and organization of the material inputs by the school staff (Fuller, 1985). High quality schools adopt a strategy with smart goals, frequent dialogue between management and staff, and free communication between teachers and students and among teachers. In addition, promotion of innovations even with mistakes, high integrity of management, and security of staff within a conducive teaching and learning environment are critical ingredients in school quality (Roy et al, 2016). To achieve school quality a combination of inputs, processes, outputs and outcomes have to be involved in the institution (Reddy, 2007). Masino and Nino-Zarazua (2016) in support suggest that achieving learning results is more successful when two or more drivers in form of supplies, administration, and enrolment are treated together rather, rather than provision of just inputs that may undermine the full utilization of education services.

In a number of countries, including Uganda, schools are operating in a liberalized market environment with free competition between the public and the private schools. This has forced the schools to become client (parents and students) centered and therefore have to promote continuous improvements in inputs, processes, outputs and outcomes. This is supported by Weiss' Policy Theory of School Choice (Weiss, 1998) which postulates that schools with attractive educational programs are highly sought after by the parents for enrolment of their children. The higher enrolments generate more resources for the schools, enabling them to expand and/or improve on their quality further; otherwise, they shrink.

2.2 High Performance Education Institutions

High Performance Education Institutions (HPEIs) at the basic minimum level are distinguished by amenities including: ability to learn and adapt against a given external environment including demographic changes and technological advancement; appropriate infrastructure and other resources, both financial and non- financial (human, talent and time); and a culture of reflection and learning. All these contribute to the quality of the schools' suitable physical working conditions for effective instructional and administrative leadership in the change implementation process (Matter, 2012).

The 1986 Deming Theory by Kriemadis, et al (2018) within the framework of education focuses on the context of total quality management (TQM). The theory suggests that competition within a school and among schools is counterproductive, instead there is need to advocate for teamwork from the competing units to solve outstanding problems. While it runs against Weiss' Policy Theory of School Choice which is competition-based, it observes the following principles: encouraging constant improvement in performance and customer satisfaction; focusing on costs verses benefits; quality, service and speed; prevention rather than cure; staff training; and efficient use of resources and innovations.

2.3 Supportive School Atmosphere – Rural/Urban and Public/Private Schools

The absence of factors that provide for the conducive school environment leads to challenges associated with school quality, teacher motivation, school leadership, and students' background and attitude (Tella, 2007). These

factors manifest differently in different types of institutions with regard to rural/urban and public/private schools.

Rural/Urban Schools

Rural/urban comparisons should put into account students' background (socio-economic) factors, according to Hammaway and Talbert (1993). The student background factors may include socio-economic status of the student's family, and genetic intelligence. However, after controlling for the student background variables, in his study, Young (1998) asserts that the students who attended rural schools in Western Australia did not perform as well as those from urban schools. Similarly, students in rural Canada are ranked below their counterparts in urban areas as attested to in the 2003 PISA[1] when urban students performed better than rural students in mathematics, reading and science across all provinces in Canada and to a great extent this being the case around the world (CCL[2], 2006).

Public/Private Schools

A combination of high level of teacher presence, teaching activities and teaching approach in private schools makes teaching better in private schools compared to public schools and leads to improved learning outcomes (Ashley et al, 2014). This view supported by OECD (2012) postulates that the creativity and innovation in private schools make them competitive, providing a greater choice to the parents and students for private schools. In addition, the access to resources creates a better supportive learning environment in the private schools compared to their counterparts in state schools as evidenced from PISA results.

2.4 Learning Achievements

Olson and Hergehalin (2013) associate learning with behavior change or cognitions that involve knowledge, skills, and beliefs that lead learners to change from the way they behaved before learning. This can be possible in a good school environment, which re-enforces classroom set up to support the school community to teach and learn at a level conducive enough to achieve the strategic goals (Freiberg, 1999).

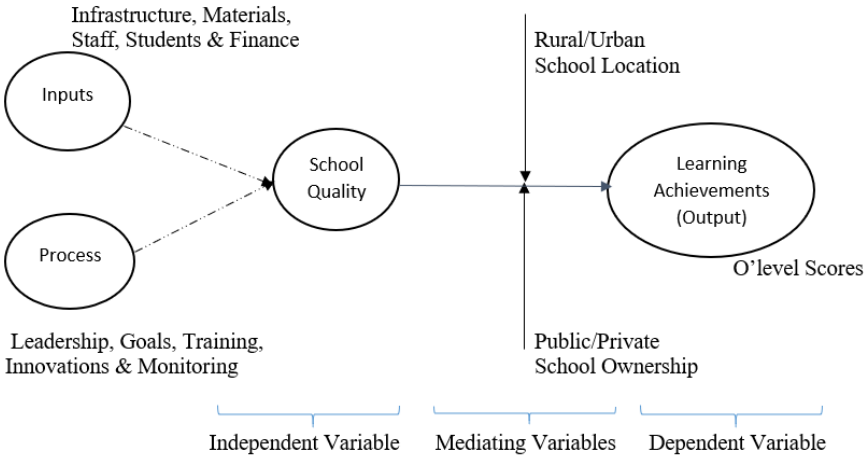
Specifically, Tella identifies the following as key factors inhibiting quality learning in disadvantaged low income countries (LICs), including Uganda: students' lack of interest in the subject; inadequate task orientation and skills acquisition; limited personality and self-efficacy; insufficient feeling of motivation and self-confidence; shortage of qualified and motivated subject teachers; and use of traditional chalk and talk (rot teaching methods).

It should be noted that learning achievements are a result of a cause-effect relationship driven by internal and external factors of a given school that may be presented as a conceptual framework.

2.5 Conceptual Framework

The effect of school quality on students learning achievements in the two selected study districts of Iganga and Jinja based on a causal effect model with independent, dependent, and mediating variables. The dependent variables are constructed from the Senior 4 end year results for the past 5 years (2013-2017) using secondary data. On the other hand, the independent variables are represented by school quality factors, including inputs (finance and non-finance resources such as human capital and infrastructure), and processes (strategic goals and their adaptation, innovations, communication). While the mediating variables are made up of the rural/urban and public/private school factors related to socio-economic conditions.

Figure 2.1: Conceptual Framework - Influence of Lower Secondary School Quality on the Students' Learning Achievements in Two Selected Districts of Iganga and Jinja in Uganda



Source: Author's Compilation, 2018

[1] PISA is Program for International Student Assessment
[2] CCL is Canadian Council on Learning – Lessons in Learning

3.0 Research methodology

The research study has a sampling frame of 126 secondary schools from the two study districts of Iganga and Jinja, representing 4.1% of the total number of schools in the country (Statistical Abstract 2017). Given the heterogeneity of the population based on urban and rural locations, and public and private school ownership; and in order to minimize sample selection bias, stratified random sampling method was applied. The study population was structured into urban, rural, public and private schools ending up with four permutations of rural/public (20), rural/private (60), urban/public (13), and urban/private (33). Nine schools were picked from each of the stratum using a random method resulting in a sample size of 36 schools. Both primary data and secondary data was collected. The primary data was collected using direct-questionnaire interview method by the Research Assistants from teachers and head teachers of the visited schools under the Researcher's close supervision. The secondary data for the examination scores was obtained from the National Examination Board (UNEB) in Kampala. Data integrity and confidentiality were observed. Data was captured into Excel spreadsheets for cross validation and completeness and accuracy before it was exported to SPSS for statistical analysis. Studies on secondary education in Uganda with similar sample size (30) that have provided useful policy and academic contribution include NAPE, 2013; and Okurut, 2010.

A school sample of 36 out of 126 schools in the study population is statistically large enough to ensure adequate, reliable and valid statistical analysis results as tested and confirmed below.

Adequacy

Table 3.1: KMO Sampling Adequacy

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	1.015
	Df	1
	Sig.	.314

The KMO value 0.5 (50%) from the Table 3.1 above indicates a fair sampling adequacy of the sample data from the study population according to the Kaiser-Mayer-Olkin principle.

Validity

To evaluate the effectiveness of the questionnaires used (Mugenda and Mugenda, 1999 in Luvai and Maende 2014) the questionnaires were validated through application of content validity determined by an expert judgment method. Content validity of the questions in the questionnaires was ensured following the researcher's consultation with peers and supervisors from the National Curriculum Development Center, Kampala. These qualitative validation processes contributed to the validity of the data collected. Finally, the questionnaires' content validity index (CVI) was computed as follows:

CVI = Agreed items by both judges as suitable ÷ Total number of items being judged

Table 3.2: Content Validity Index

Rater C1	Relevant Items C2	Not Relevant Items C3	Total Items C4	CVI= C2/C4
Rater 1	12	1	13	12/13= 0.92
Rater 2	12	1	13	12/13 = 0.92
Overall	**24**	**02**	**26**	**24/26 = 0.92**

Source: Field Data

The established CVI of 0.92 indicates that the instrument was valid.

Reliability

Table 3.3: Reliability Statistics

Category	Cronbach Alpha	Number of items
Availability	.905	38
User-ability	.976	41
Accessibility	.976	41
Head teachers' Interpretation	.952	40
Overall	**.952**	**40**

A pilot was conducted after establishing the validity. Four respondents from Kampala district secondary school head teachers were used in the pilot to answer the questionnaire. Their responses were subjected to a Cronbach's Alpha Coefficient reliability test as indicated in the Table 3.3 above. $\alpha = 0.952$ indicated that the questionnaire was very reliable.

4.0 Data Analysis and Discussions

4.1 Explanatory Data Analysis

Explanatory data analysis (EDA) has been applied in order to better appreciate the sample distribution and make some tentative conclusions about the population distribution.

These results were obtained from 34 schools out of a sample of size of 36 from the two study districts translating into a response rate of 94.4%. Out of the schools that responded, 20 were private, and 14 were public, while 15 were rural, and 19 were urban (Table 4.1). A total of 127 responses out of 144 administered questionnaires (88.2%) were used in the data analysis.

Table 4.1: Stratified Sample Schools that responded to Data Collection

Schools	Private	Public	Total
Rural	12	3	15
Urban	8	11	19
Total	20	14	34

Source: Field Data, 2018

The objective was to establish the effect of school's quality on the school learning achievements as perceived by the head teachers and teachers from the sample schools. The question items on school's quality were structured into Input, and Process as per the Conceptual Framework. Items were measured on a five-point Likert scale where code 1 = Strongly Agree (SA), 2 = Agree (A), 3 = Not Sure (NS), 4 = Disagree (D) and 5 = Strongly Disagree (SD). They were analyzed before they were statistically tabulated (Table 4.2) with frequencies and percentages presented from the responses collected from both the head teachers and the teachers.

4.1.1 School's Quality and School Learning Achievements in Uganda: Responses from the Head Teachers (Table 4.2)

The responses were with respect to both inputs and processes treated separately.

Inputs

Question 1.1 - whether the school has adopted a strategy that sets it clearly apart from other schools: 52.9% strongly agreed, 47.1% agreed, 0.0% were not sure, while 0.0% disagreed and 0.0% strongly disagreed. The mean = 1.47 corresponds with "Agreed" indicating the majority of the respondents at least agreed that the schools visited had adopted a strategy that sets it clearly apart from other schools.

Question 1.2 - financial and non-financial information sharing with staff members: again 52.9% strongly agreed, 38.2% agreed, 0.0% were not sure, 5.9% disagreed, and 2.9% strongly disagreed. The mean = 1.68, indicates the head teachers of responding schools generally agreed that they share financial and non-financial information with school staff.

Processes

Question 2.1 - whether the administration of school resources continuously improves, 41.2% strongly agreed, 52.9% agreed, 2.9% were not sure, 2.9% disagreed, and 0.0% strongly disagreed. The mean = 1.6 corresponded to Agreed, indicating on average that the schools visited had the school processes in Question 2.1 continuously improved.

4.1.2 School's Quality and School Learning Achievements in Uganda: Responses from the Teachers (Table 4.2)

Inputs

Question 1.1- whether the school has adopted a strategy that sets it clearly apart from other schools: 45.2% of the teachers strongly agreed, 54.8% agreed, 0.0% were not sure, 0.0% disagreed, and 0.0% strongly disagreed. The mean = 1.55 corresponds to Agree indicating the majority of respondents at least agreed to inputs in Question 1.1. The standard deviation = 0.50 showing that there was no difference in the opinions of respondents since it the standard deviation is close to the mean on the likert scale.

Table 4.2: Descriptive Statistics on School's Quality and School Learning Achievements in Uganda.

School Quality	Head Teacher							School Teachers						
	SA	A	NS	D	SD	Mean	Std. Dev	SA	A	NS	D	SD	Mean	Std. Dev
1.0 Input														
1.1 The school has adopted a strategy that sets it clearly apart from other schools (Infrastructure, teaching and learning materials, competent teachers, active participation in school activities)	52.9% (18)	47.1% (16)	0.0% (0)	0.0% (0)	0.0% (0)	1.47	0.51	45.2% (42)	54.8% (51)	0.0% (0)	0.0% (0)	0.0% (0)	1.55	0.50
1.2 Both financial and non-financial information is reported to staff members	52.9% (18)	38.2% (13)	0.0% (0)	5.9% (2)	2.9% (1)	1.68	0.98	28.0% (26)	40.9% (38)	12.9% (12)	14.0% (13)	4.3% (4)	2.23	1.11
2.0 Process														
2.1 The School processes (such as procurement, payments, teacher recruitment and appraisals, students admission and disciplining) are continuously improved	41.2% (14)	52.9% (18)	2.9% (1)	2.9% (1)	0.0% (0)	1.6	0.56	33.3% (31)	58.1% (54)	6.5% (6)	2.2% (2)	0.0% (0)	1.77	0.66
2.2 The school processes (such as approvals/clearances by authorities e.g. for leave, training or payment) are continuously simplified	26.5% (9)	52.9% (18)	2.9% (1)	8.8% (3)	8.8% (3)	2.12	1.11	15.1% (14)	53.8% (50)	12.9% (12)	12.9% (12)	5.4% (5)	2.34	1.00
2.3 The school processes are continuously aligned (teaching before tests, teachers appraisals before promotional interviews)	52.9% (18)	44.1% (15)	0.0% (0)	2.9% (1)	0.0% (0)	1.53	0.66	37.6% (35)	52.7% (49)	5.4% (5)	2.2% (2)	2.2% (2)	1.75	0.75
2.4 Everything that matters to the school's performance (such as discipline, financial and non-financial statements, and academic performance) is shared among the staff	61.8% (21)	26.5% (9)	0.0% (0)	11.8% (4)	0.0% (0)	1.62	0.99	40.9% (38)	48.4% (45)	4.3% (4)	6.5% (6)	0.0% (0)	1.76	0.81
2.5 The school continuously innovates its products/services (use of technology in curriculum delivery, bench marking from better successful schools)	47.1% (16)	50.0% (17)	2.9% (1)	0.0% (0)	0.0% (0)	1.56	0.56	33.3% (31)	52.7% (49)	4.3% (4)	7.5% (7)	2.2% (2)	1.92	0.94
2.6 The school ensures core competencies (teachers in examinable subjects) are retained in-house and non-competences (janitorial and cooking services) are outsourced	32.4% (11)	52.9% (18)	5.9% (2)	5.9% (2)	2.9% (1)	1.94	0.95	18.3% (17)	58.1% (54)	12.9% (12)	6.5% (6)	4.4% (2)	2.14	0.88
2.7 The school grows through partnerships with suppliers and/or parents and students	61.8% (21)	35.2% (12)	2.9% (1)	0.0% (0)	0.0% (0)	1.41	0.56	47.3% (44)	34.4% (32)	12.9% (12)	2.2% (2)	3.2% (3)	1.70	0.83
2.8 The school maintains good and long term relationships with all stakeholders	79.4% (27)	20.6% (7)	0.0% (0)	0.0% (0)	0.0% (0)	1.21	0.41	48.4% (45)	41.9% (39)	4.3% (4)	1.1% (1)	4.3% (4)	1.60	0.73
2.9 The school is aimed at servicing the customers (parents and students) as best as possible	73.5% (25)	23.5% (8)	0.0% (0)	2.9% (1)	0.0% (0)	1.32	0.64	62.4% (58)	29.0% (27)	3.2% (3)	1.1% (1)	1.1% (1)	1.44	0.72
2.10 Management is promoted from within the school	50.0% (17)	38.2% (13)	11.8% (4)	0.0% (0)	0.0% (0)	1.59	0.80	35.5% (33)	46.2% (43)	8.6% (8)	2.2% (2)	1.1% (1)	1.79	0.79
2.11 The school is a secure work place for the staff members where they feel free to contribute to their best	61.8% (21)	26.5% (9)	0.0% (0)	11.8% (4)	0.0% (0)	1.46	0.80	37.6% (35)	43.0% (40)	9.7% (9)	5.4% (5)	0.0% (0)	1.82	0.83
2.12 The management has been with the school for a long time (not less than 5 years)	41.2% (14)	32.4% (11)	0.0% (0)	17.6% (6)	8.8% (3)	2.03	1.23	38.7% (36)	29.0% (27)	11.8% (11)	9.7% (9)	2.2% (2)	1.99	1.09

Source: Primary Data 2018

Question1.2 - financial and non-financial: responses registered 28.0% strongly agreed, 40.9% agreed, 12.9% not sure, 14.0% disagreed, and 4.3% strongly disagreed. The mean = 2.23 corresponded to Agree; while the standard deviation =1.11 indicating there are no significant difference between opinions of the respondents as it is close to the mean on the likert scale.

Processes

Question 2.1 – the school processes are continuously improved. 33.3% responded as strongly agreed, 58.1% agreed, 6.5% not sure, 2.2% disagreed, and 0.0% strongly disagreed. The mean = 1.77 indicating overall agreed position

by teachers, and the standard deviation = 0.66 is close to the mean indicating a harmonized perception about this process.

Question 2.11 - the school is a secure work place for the staff members where they feel free to contribute to their best: 37.6% strongly agreed, 43.0% agreed, 9.7% not sure, 5.4% disagreed, and 0.0% strongly disagreed. The mean = 1.82 falls in the Agreed position, and standard deviation = 0.83 indicates generally no difference in teachers' responses under this process.

4.2 Descriptive Statistics

Input and process descriptive statistics are analyzed separately for the primary respondents (the head teachers).

4.2.1 Inputs Descriptive Statistics

Table 4.3: Common Summary Descriptive Statistics on Head Teachers' Rating of School's Quality (Inputs)

Descriptive Statistics				
			Statistic	**Std. Error**
Inputs for School Quality	Mean		1.5294	.07882
	95% Confidence Interval for Mean	Lower Bound	1.3691	
		Upper Bound	1.6898	
	Median		1.5000	
	Std. Deviation		.45960	
	Minimum		1.00	
	Maximum		2.50	
	Range		1.50	
	Skewness		.127	.403

Source: Primary data 2018

Table 4.3 shows head teacher's ratings on school's quality with mean value = 1.5294 and median = 1.5000 and opinions ranging from 1.3691 to 1.6898 at the 95 percent confidence level. Note that some head teachers chose Strongly Agree with a score of 1.00 while others opted for Agree with a score in the limit of 2.50 hence a disparity of 1.50.

The standard deviation value = 0.45960 suggests that head teachers' views regarding school's quality in different secondary schools do not differ so much from one respondent to another as it is close to the mean = 1.5294 on the Likert Scale. The head teachers' perception of inputs in schools and learning achievements are almost normally distributed with Skewness = 0.127 and Standard Error = 0.403.

4.2.2 Processes Descriptive Statistics

Table 4.4 shows that head teacher's ratings on schools' quality is on average (mean value = 1.7382 and median = 1.7500) with opinions ranging from 1.5396 to 1.9368 at the 95 percent confidence level. Note that some head teachers chose Strongly Agree with a score of 1.00 while others scored at 3.67 with a rating of Not Sure on a Likert Scale of 1-5, hence a disparity of 2.67. The standard deviation = 0.56919 suggests head teachers' opinions regarding performance of secondary schools with respect to the processes in the schools are almost normally distributed. This is confirmed by Skewness = 1.083.

Table 4.4: Common Summary Descriptive Statistics on Head Teachers' Rating of School's Quality (Processes)

Descriptive Statistics				
			Statistic	Std. Error
Processes for School Quality	Mean		1.7382	.09762
	95% Confidence Interval for Mean	Lower Bound	1.5396	
		Upper Bound	1.9368	
	Median		1.7500	
	Std. Deviation		.56919	
	Minimum		1.00	
	Maximum		3.67	
	Range		2.67	
	Skewness		1.083	.403

Source: Primary data 2018

4.3 Testing Hypotheses: Multivariate Level Regression Analysis

The Dependent Variable (DV) students' learning achievements (SLA) was regressed on the Independent Variable (IV) school's quality (SQ) using SPSS. A mathematical model of the form below was developed:

$SLA = \Omega + \beta_1 SQ + \sum$ …….. Equation (4.1)

Where any positive beta implied DV (SLA) is positively- related to the corresponding IV (SQ) and verse visa. The

β was accompanied by a p-value that was used to determine whether the β was significant. The relevant statistics including the constant, β and their p-values were generated from the SPSS.

4.3.1 Regression of School's Quality on School Learners' Achievement (Inputs and Processes combined)

Constant Value (-1.022) (0.000)

The constant value = 1.022 (Table 4.5) means that holding other factors constant, performance will reduce at a rate of 102.2% on average. The p-value = .000 also shows that it is significant not to achieve quality in school when there are no inputs and processes.

Table 4.5: Regression of School's Quality on School Learners' Achievement (Inputs and Processes combined)

Coefficients						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.022	.116		8.829	.000
	School's quality	.076	.0066	-.200	-11.155	.0257
a. Dependent Variable: school learning achievements						

School Quality Coefficient (0.076) (.0257)

The coefficient of average school quality = 0.076 indicates other factors constant and if school's quality was enforced in the secondary schools visited, learners' achievement would increase by 7.6% on average. The p-value = .0257 means it is significant working with inputs as well as enforcing processes in the schools to achieve a significant performance in secondary schools in Uganda.

4.3.2 Regression of School Quality on Learners' Achievements (Inputs and Processes analysed separately)

i) Inputs Regression Model

Table 4.7: Regression Model of School Quality and Student Learner's Achievements

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.970	.118		8.214	0.000
	Inputs for School Quality	0.049	.074	-.117	-2.667	0.015
a. Dependent Variable: Student Learner's Achievements						

From Table 4.7 above, a unit change in the school inputs affects the pass rate by 4.9% on average in the 34 schools that responded. The p-value = 0.015 (< 0.05) indicates the significance of inputs in the learning process.

ii) Process Regression Model

Table 4.8: Regression Model of School Quality and Student Learners' Achievements

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.018	.107		9.466	0.000
	Processes in School Quality	0.071	.059	-.209	-2.206	0.024
a. Dependent Variable: Student Learner's Achievements						

Table 4.8 presents the effect of administration of teaching process on the students' learning achievements. A unit change in the school administration process changes the pass rate by 7.1% on average in the visited schools with p -value = 0.024 (<0.05) indicating the significance of school administration in the learning process for the students.

4.3.3 Effect of Secondary School Ownership on Student's Learning Achievements

Table 4.9: Effect of Secondary School Ownership on Student's Learning Achievements

Descriptive Statistics								
Student's Learning Achievement								
					95% Confidence Interval for Mean			
Schools Ownership Type	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min.	Max
Pub. Schools	14	.8857	.26561	.07099	.7324	1.0391	.00	1.00
Priv. Schools	20	.9000	.12978	.02902	.8393	.9607	.50	1.00
Total	34	.8941	.19375	.03323	.8265	.9617	.00	1.00

Source: Researcher's Field Work, 2018

Table 4.10: ANOVA Results on Regression of School Ownership on Students' Learning Achievements

ANOVA					
Student's Learning Achievement					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.002	1	.002	.043	.836
Within Groups	1.237	32	.039		
Total	1.239	33			

It is assumed that there is no significant difference in the performance of public and private secondary schools in Jinja and Iganga district.

There was a statistically significant difference when the two means for public and private schools from the two districts were compared, with public schools mean = 0.8857 and private schools mean = 0.9000 at the $p < .05$ level in student's learning performance (Table 4.9). Scores for two groups are $F(1, 32) = 0.043$, $p = 0.836 > 0.05$ (Table 4.10) which implies that there is a significant difference in the student's learning performance in the two groups (public schools' performance, 89% and private schools' performance, 90%)[1]. We therefore reject the null hypothesis and conclude that there is a statistical significant difference in the student learning performance of public and private lower secondary schools of the two study districts.

4.3.4 Effect of Secondary School Location on Student's Learning Achievements

Table 4.11: Effect of Secondary School Location on Student's Learning Achievements

Descriptive Statistics								
Student Learner's Achievements								
					95% Confidence Interval for Mean			
Location	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Urban	19	.9368	.07609	.01746	.9002	.9735	.80	1.00
Rural	15	.8400	.27464	.07091	.6879	.9921	.00	1.00
Total	34	.8941	.19375	.03323	.8265	.9617	.00	1.00

Table 4.12: ANOVA Results of Regression of School Location on Students' Learning Achievements

ANOVA					
Student Learner's Achievements					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.079	1	.079	2.168	.151
Within Groups	1.160	32	.036		
Total	1.239	33			

Assuming that there is no significant difference in the performance of urban and rural secondary schools in Jinja and Iganga districts.

There was a statistically significant difference between the two means of urban and rural secondary schools, urban schools = 0.9368, and rural schools = 0.8400 at the $p < 0.05$ level in student's learning performance. Scores for two groups $F(1, 32) = 2.168 > p = 0.151$ (Table 4.12) meaning there is a significant difference in the student's learning performance in the two groups of Urban schools at 94% and rural schools at 84%. We therefore reject the null hypothesis and conclude that there is a statistically significant difference in the student learning performance in the lower secondary schools between urban schools and rural schools of the two study districts.

5 CONCLUSION AND RECOMMERNDATIONS

The main objective of the study was to examine the influence of lower secondary school quality on the students' learning achievements in the two selected districts of Iganga and Jinja in Uganda. The implications and recommendations are as given below:

5.1 Conclusion of the Study

i) Policy at National Level: From Annex 1 the two districts have an average pass rate (number of candidates who scored at least grade 3 out of the total) of 76% over the 5 year period under review (2013-2017) implying that 24% of the students could not comprehend the curriculum at O'level. In addition, from Tables 4.10 and 4.12 the disparity in school performance by school ownership (public or private) and location (urban or rural) implies unequal distribution of resources and attention in these schools.

ii) School Level: Namungalwe S.S. had candidates for the whole period of 5 years under review but scored as low as 62% (Annex 1). Inadequate supplies of infrastructure, equipment and materials, and insufficient

[1] Despite the statistical significance, the actual difference in mean scores between the two groups was quite small.

teaching staff characterize the school, which may be contributing to poor performance. This means that the supply side in schools together with the administration of the schools are critical to the pass rate. In addition, qualitatively one of the respondents stated *"School quality mainly lies within the personal ability of head teacher to relate with teachers, and other available resources; and to technically supervise teaching and think ahead for the school. However, because most of the head teachers are not trained but employed by relatives they lack these aspects."* Therefore, both quantitatively and qualitatively a positive influence of school quality on school learning achievement of lower secondary schools in the two districts of Iganga and Jinja in Uganda is observed.

5.2 Recommendations

i) Government needs to address the failure rate that remains high at 24% as per the sample schools of the study districts of Jinja and Iganga; as well as to bridge the performance differences between the public and private schools, and between the rural and urban schools.

ii) At school level, management should formulate smart strategic plans and ensure they are adopted, monitored and evaluated. Schools should be cognizant of the fact that student learning is the result of a complex system in which not only are inputs important, but also the educational processes taking place in the classroom.

5.3 Limitations of the Study

i) Students of say urban or private schools could have had higher entry levels as a result of family background or other factors that continue to support the student through education. It is difficult to accurately assess the differences between rural/urban and public/private sectors as this variable is missing in the conceptual model.

ii) The geographical scope was limited to a particular region of the country due to limited time and resources that may affect the conclusion for the whole country due to peculiarity of conditions in the different parts of the country.

5.4 Areas for Further Research

Improvement of school quality is a continuous process and to efficiently apply the interventions, the determining factors in the performance gaps should be research based. Following this study further research to determine weaknesses in school quality should be focused on the factors not only on the supply and demand sides but also on the processes. Provisions of both financial and non-financial resources in school, attraction to school by the students and parents, and administration of the school need further research.

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of O'Level Cycle Pass Rate 2013-17

							Pass Rate (Division 1-3)					
Sn	**District**	**School Name**	**UNEB NO.**	**Owner Ship**	**Location**	**EMIS No**	**2013**	**2014**	**2015**	2016	**2017**	**Avg Pass Rate**
1	Iganga	Berkerly SS	U3061	Private	Rural	0	0.00	0.00	0.00	0.60	0.75	0.27
2	Iganga	Bulamagi Co		Private	Rural	88,135	0.00	0.00	0.80	0.55	0.65	0.40
3	Iganga	Bulunguli S	U3055	Public	Rural	88,126	0.00	0.82	0.96	0.96	0.97	0.74
4	Iganga	Busembatya	U0202	Public	Urban	1,755	0.47	0.97	0.92	0.96	0.93	0.85
5	Iganga	Greenfield		Private	Urban	2,021	0.00	0.00	0.00	0.00	0.00	0.00
6	Iganga	Kigulu Coll	U0491	Public	Rural	2,105	0.53	0.88	0.95	0.90	0.98	0.85
7	Iganga	Namungalwe	U1531	Private	Rural	88,056	0.40	0.79	0.50	0.55	0.88	0.62
8	Iganga	Standard SS	U2902	Private	Urban	88,062	0.42	0.78	0.78	0.49	0.85	0.66
9	Iganga	Nakalama	U1602	Public	Urban	2,062	0.49	0.93	0.93	0.94	1.00	0.86
10	Iganga	Bubinga H.S	U0647	Public	Rural	1,697	0.50	0.85	0.78	0.63	0.72	0.70
11	Iganga	Country Sid	U1366	Private	Rural	2,104	0.48	0.89	0.84	0.70	0.91	0.77
12	Iganga	Kiribaki SS	U0811	Private	Rural	1,984	0.64	0.97	0.96	0.94	0.99	0.90
13	Iganga	Iganga Comp	U1529	Private	Rural	88,022	0.58	0.91	0.83	0.82	0.97	0.82
14	Iganga	Iganga H.S	U0078	Public	Urban	2,029	0.69	1.00	1.00	1.00	1.00	0.93
15	Iganga	Iganga Topcare	U1700	Private	Urban	0	0.50	0.81	0.91	0.85	0.93	0.80
16	Iganga	Kings of Ki	U0732	Private	Urban	1,705	0.52	0.86	0.83	0.82	0.84	0.77
17	Iganga	Iganga S.S	U0017	Public	Urban	0	1.00	1.00	1.00	1.00	1.00	1.00
18	Jinja	Busoga Coll	U0059	Public	Urban	2,260	0.97	1.00	1.00	1.00	1.00	0.99
19	Jinja	East S.S Buyala	U1763	Private	Rural	0	0.44	0.80	0.80	0.66	0.81	0.70
20	Jinja	Gloryland Colleg	U2362	Private	Urban	98,043	0.54	0.85	0.84	0.81	0.96	0.80
21	Jinja	Holy Cross	U0739	Private	Rural	0	0.98	1.00	1.00	1.00	1.00	1.00
22	Jinja	St. Peter's	U0167	Private	Rural	0	0.53	0.95	0.85	0.78	0.81	0.78
23	Jinja	Jinja S.S	U0018	Public	Urban	2,292	0.73	0.99	0.99	0.98	0.99	0.94
24	Jinja	Butembe SS	U2878	Private	Urban	98,048	0.44	0.81	0.88	0.94	0.94	0.80
25	Jinja	Mutai SS	U3123	Private	Rural	0	0.00	0.79	0.62	0.67	0.82	0.58
26	Jinja	Nakabango	U2586	Private	Rural	0	0.57	0.93	0.89	0.65	0.88	0.78
27	Jinja	MM College	U0029	Public	Urban	2,259	0.78	1.00	1.00	0.94	1.00	0.94
28	Jinja	Viva College	U3462	Private	Urban	0	0.00	0.00	0.00	0.00	0.00	0.00
29	Jinja	Jinja Modern	U1079	Private	Urban	2,303	0.53	0.86	0.72	0.84	0.84	0.76
30	Jinja	Jinja Progrv	U1879	Private	Rural	98,093	0.63	1.00	0.95	1.00	0.99	0.91
31	Jinja	Masese Girls	U1502	Public	Urban	98,090	0.67	0.97	0.98	0.99	0.99	0.92
32	Jinja	Mother Kevn	U1137	Public	Urban	2,314	0.82	0.98	0.98	1.00	0.99	0.95
33	Jinja	PMM Girls'	U0056	Public	Urban	2,294	0.69	0.98	0.97	0.99	1.00	0.92
34	Jinja	Wanyange Girls	U0005	Public	Urban	0	0.98	1.00	1.00	1.00	1.00	1.00
	Overall						**0.52**	**0.81**	**0.81**	**0.79**	**0.86**	**0.76**

Source: Uganda National Examinations Board, 2018